

## ABSTRACT

A variable capacitance and control system used in a compensative manner to improve efficiency in power amplifier arrangements arranged to receive a power input  
5 which is voltage-modulated responsive to at least one control signal representative of the data signal. Also included are methods and software for controlling said power amplifier arrangements including the variable capacitance and control system. The data input to the power  
10 amplifier is pre-distorted and the resulting power amplification is substantially linear. The arrangement may be used in wireless base station transmitters, for example. Improved data transmission services are also provided which make use of such power amplifiers.